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Profile of Hospitalizations for Elderly People in the State of Amapá - Brazil, From April 2018 to April 2019

José Natanael Gama dos Santos[1], Lidiane Assunção de Vasconcelos[2], Stephany Siqueira Braga[3], Hilton José Vaz[4], Amanda Silva Arenhardt[5], Amanda Maria de Almeida Moreira[6], Izaura Maria Vieira Cayres Vallinoto[7], Jéssica Silva Souza[8], Cibele Maria de Almeida[9], Camilo Eduardo Almeida Pereira[10], Laura Caroline Ferreira Cardoso[11], Renê Sousa Franco[12].

[1]Medical student at Federal University of Pará (UFPA). Belém, Pará, Brazil.
[2]Master in Health, Environment and Society in the Amazon, Federal University of Pará (UFPA). Professor at Cosmopolitan College. Belém, Pará, Brazil.
[3]Nursing student at State University of Pará (UEPA). Belém, Pará, Brazil.
[4]Medical student at Federal University of Pará (UFPA). Belém, Pará, Brazil.
[5]Medical student at Federal University of Pará (UFPA). Belém, Pará, Brazil.
[6]Medical student at Federal University of Pará (UFPA). Belém, Pará, Brazil.
[7]Teacher at Federal University of Pará (UFPA). Belém, Pará, Brazil.
[8]Graduate in Pharmacy. Belém, Pará, Brazil.
[9]Doctor, post-graduate in occupational medicine, post-graduate in preceptorship for medical residency, master's student in health education. Belém, Pará, Brazil.
[10]Nurse, master in health and society in the amazon at Federal University of Pará (UFPA), specialist in occupational nursing from Integrated College of Rio de Janeiro. Belém, Pará, Brazil.
[11]Graduate in nursery by State University of Pará (UEPA). Belém, Pará, Brazil.
[12]Medical student at Federal University of Pará (UFPA). Belém, Pará, Brazil.

Abstract**—***The World Health Organization (WHO) characterizes elderly people who are 60 years old or older in developing countries and 65 years old in developed countries. In Brazil, it is considered elderly from 60 years, based on the Elderly Statute and public policies related to aging (Santa Catarina, 2018). The objective of this study is to analyze the profile of hospitalizations of the elderly in the State of Amapá. Retrospective study with a quantitative approach on the profile of hospitalizations of elderly people in the State of Amapá, from April 2018 to April 2019, as a data source, DATASUS was used. The results show that in the period between April 2018 and April 2019, there were 4,453 hospitalizations in the state of Amapá for elderly people over 60 years of age, representing 10.60% of total hospitalizations. The main causes of hospitalizations are diseases of the circulatory system, with (24%), followed by 14% of diseases of the respiratory system. In addition to finding that 46.4% (2,067) of hospitalizations for pathologies and injuries are in the age range between 60 and 69 years. It concludes that the state of Amapá with its local health system needs to reorganize its hospital structures, with the insertion of indicators that favor actions to improve the quality of care. Evidencing primary care as a gateway for this population, in order to improve the quality of life of these people and reduce the burden on hospital institutions.*

Keywords**—Elderly, Hospitalization, Chronic diseases, Mortality, Amapá.**

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I. INTRODUCTION

With the advent of industrial revolutions and the improvement in the quality of life, the levels of mortality and birth rates have decreased over time. These indicators impacted the population's life expectancy, contributing to population aging and the emergence of new health demands, especially for the care of the four main chronic diseases: cardiovascular diseases, cancers, chronic respiratory diseases and diabetes, resulting in greater cost and time prolonged in health services (Parente, et al, 2018; Melo, 2019).

The World Health Organization (WHO) characterizes the elderly any citizen aged 60 or over in developing countries and 65 years in developed countries. In Brazil, the aging process started in the 1960s and is considered elderly from 60 years old, based on the Elderly Statute and public policies related to aging (Santa Catarina, 2018).

It should be noted that the brazilian scenario has been going through a rapid aging process of its population. According to the Brazilian Institute of Geography and Statistics (IBGE), the life expectancy of brazilians, in 2016, reached an average of 75.72 years. In 2015, there were around 29 million brazilians aged 60 or over, which is equivalent to 14.3% of the total population and projections indicate that, in 2030, this number will surpass that of children and adolescents aged 0 to 14 years about 2.28 million. This scenario in 2050 shows that the elderly population will represent about 30% of the brazilian population (Brasil, 2018).

The demands of public services must accompany this scenario of population growth, associating age with chronic diseases, in order to monitor the health problems of the elderly to ensure functional capacity and autonomy for as long as possible, seeking to reduce hospitalizations, use of medicaments, tests and other procedures. However, the Health Unic System (SUS) demonstrates an overload of the system, with financial impact at all levels and without generating benefits for the user's quality of life, given that the elderly has many diseases and uses hospital health services a lot (National Supplementary Health Agency, 2016).

The high rates of hospitalization of the elderly indicates that these people are aging with low quality of life, and this represents a challenge for health systems to offer good health care, built in the reception and in the entire care process, and should start at the service entrance door and accompany the user throughout their participation in the health system (Brasil, 2018). It is evident that in Brazil, chronic noncommunicable diseases (NCDs) cause 72% of deaths and 75% of health care expenditures in SUS (Wanderley, 2019). This picture reflects that the NCDs that most lead to death among the elderly in Brazil are: diseases of the circulatory system, neoplasms and diseases of the respiratory system, and accounted for 80% of deaths between both sexes (Conte, 2018).

In this perspective, indicators that favor improvement actions such as hospital death, should be inserted, as this is an indicator of a problem in the quality of care provided (Cordeiro & Martins, 2018). In addition, basic care must be expanded in order to be able to be the first level of care, acting as the entrance door of the system. It is necessary to insert instruments that guarantee the improvement of quality and increase in the resolution of care for the elderly (Mendes, 2011 apud Lima, et al, 2018).

Given the relevance of the topic, it is essential to conduct a study that characterizes the profile of hospitalizations of the elderly, in order to know the users who demand health services to help reduce the morbidity and mortality that affects this population. Therefore, this study aimed to analyze the profile of hospitalizations of the elderly in the state of Amapá from april 2018 to april 2019.

II. MATERIALS AND METHODS

A retrospective study was carried out, with a quantitative approach on the profile of hospitalizations of elderly people in the state of Amapá, from april 2018 to april 2019. DATASUS was used as the data source. To analyze the statistical data, word and excel programs were used, the information was displayed in tables and the available literature about the topic was used, based on the data network of the Virtual Health Library (BVS), LILACS (Latin American and Caribbean Literature in Health Sciences), SCIELO (Scientific Electronic Library Online) and Ministry of Health. Certain variables were adopted, such as: county of residence, hospitalizations, sex, age group, color, deaths and injuries.

III. RESULTS

In 2018, the state of Amapá had an estimated population of 829,494 inhabitants, with approximately 53,621 thousand people over 60 years of age, representing 6.46% (IBGE, 2018). This shows that the brazilian state has been aging and needs to get old with quality. According to table 1,41,898 hospitalizations in 2018 occurred in the state of Amapá between april 2018 and april 2019, of which 4,453 hospitalizations for the elderly, representing 10.60% of hospitalizations and 8.30% of total elderly. The municipality of Macapá was the one that most hospitalized the elderly, with 58.80% and the male

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population hospitalized in this range in the state of Amapá represents 56.30% and the female 43.70%.

Table 1: Hospitalizations of elderly people by sex by county of residence, Amapá, april 2018 to april 2019

County of residence ↓↓	**Sex**					
	Male		Female		Total	
	f (n)	f (%)	f (n)	f (%)	f (n)	f (%)
1 Macapá	1.462	32,80	1.157	26,00	2.619	58,80
2 Santana	449	10,00	336	7,60	785	17,60
3 Laranjal do Jarí	254	5,80	181	4,00	435	9,80
4 Calçoene	67	1,50	57	1,30	124	2,80
5 Mazagão	57	1,10	38	0,90	95	2,00
6 Oiapoque	59	1,30	32	0,70	91	2,00
7 Vitória do Jarí	39	0,84	34	0,76	73	1,60
8 Amapá	33	0,74	34	0,76	67	1,50
9 Pedra Branca	15	0,34	16	0,36	31	0,70
10 Porto Grande	24	0,62	17	0,38	41	1,00
11 Serra do Navio	14	0,33	12	0,27	26	0.60
12 Tartarugualzinho	18	0,44	07	0,16	25	0.60
13 Ferreira Gomes	07	0,14	07	0,16	14	0,30
14 Itaúbal	03	0,12	08	0,18	11	0,30
15 Pracuúba	02	0,07	06	0,13	08	0,20
16 Cutias	06	0,16	02	0,04	08	0,20
Total	**2.509**	**56,30**	**1.944**	**43,70**	**4.453**	**100%**

Note: f(n) = quantitative value; f(%) = percentage value. Source: Ministry of Health - SUS Hospital Information System (SIH / SUS) / DATASUS

Regarding age, it can be seen in table 2 that the male population between the age group of 60 to 69 years old represents 26% of hospitalizations and the female 20% of this, totaling 46% of elderly people in a situation of hospitalization. Over 70 years old, it represents 54%, with the male population also prevailing with 30.60% and the female with 23.40%.

Table 2: Hospitalizations of elderly people by sex according to age group, Amapá, april 2018 to april 2019

Age group	**Male**		**Female**		**Total**	
	f (n)	f (%)	f (n)	f (%)	f (n)	f (%)
60 to 69 years	1.165	26,00	902	20,00	2.067	46,00
70 to 79 years	827	19,00	582	13,00	1.409	32,00
80 years and over	517	11,60	460	10,40	977	22,00
Total of elderly	**2.509**	**56,60**	**1.944**	**43,40**	**4.453**	**100%**

Note: f(n) = quantitative value; f(%) = percentage value. Source: Ministry of Health - SUS Hospital Information System (SIH / SUS) / DATASUS

Approaching hospitalizations according to the color pattern, it can be seen in table 3 that 49.50% of the people who are most hospitalized are brown. They also stressed that 31.60% of people over 60 years of age had no record regarding this information. Another relevant factor is that the age group from 60 to 69 years old (22.45%) is the most prevalent among browns.

Table 3: Hospitalizations of elderly people by color according to age group, Amapá, april 2018 to april 2019

Color	**60 |---| 69**	**70 |---| 79**	**80 years and over**	**Total**	
				f (n)	f (%)
White	336	196	80	612	14,00
Black	34	36	30	100	2,00
Brown	1.000	711	495	2.206	49,50
Yellow	55	36	28	119	2,70
Indigenous	03	04	02	09	0,20
No information	639	426	342	1.389	31,60
Total	**2.067**	**1.409**	**977**	**4.453**	**100%**

Note: **|---|** = interval**;** f(n) = quantitative value; f(%) = percentage value. Source: Ministry of Health - SUS Hospital Information System (SIH / SUS) / DATASUS

Over the years the causes of hospitalizations have been changing as the quality of life improves and in the state of Amapá it is no different from the rest of the country. According to table 4, the main causes of hospital admissions are caused by diseases of the circulatory system, with 24%, among them: brain stroke, acute myocardial infarction and other heart diseases; 14% are diseases of the respiratory system, mainly pneumonia and

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34% other pathologies related to other systems. It should also be noted that hospitalizations for neoplasms in the elderly group represent 8% and are in 4th place. In addition to finding that 46.4% (2,067) of hospitalizations for pathologies and injuries are in the age range between 60 and 69 years.

Table 4: Hospitalizations of elderly people by age group according to ICD 10, Amapá, april 2018 to april 2019

ICD10	**60 |---| 69**	**70 |---| 79**	**80 years and over**	**Total** f (%)
Neoplasms	188	117	48	8,00
Circulatory system diseases	482	379	216	24,00
Respiratory system diseases	162	203	252	14,00
Genitourinary system diseases	279	162	95	12,00
Poisoning and external causes	127	120	103	8,00
Others	828	428	263	34,00
Total	**2.067**	**1.409**	**977**	**100%**

Note: |---| = interval**;** f(%) = percentage value. Source: Ministry of Health - SUS Hospital Information System (SIH / SUS) / DATASUS

According to table 5, it can be seen that the hospital mortality rate in the state of Amapá in the analyzed period was 13.79; being higher in men with 14.23 and in women it represents 13.22. It is observed that these rates increase with age, with a predominance of 21.60 in people aged 80 and over.

*Table 5: Mortality rate of elderly people by sex according to age, Amapá, april 2018 to april 20***19**

Age group	**Male**		**Female**		**Total**	
	f (n)	TR	f (n)	TR	f (n)	TR
60 |---| 69 years	119	10,21	77	8,54	196	9,48
70 |---| 79 years	127	15,36	80	13,75	207	14,69
80 years and over	111	21,47	100	21,74	211	21,60
Total	**357**	**14,23**	**257**	**13,22**	**614**	**13,79**

Note: f(n) = quantitative value; TR = mortality rate. Source: Ministry of Health - SUS Hospital Information System (SIH / SUS) / DATASUS

When analyzing table 6, it can be seen that the character of attendance for hospitalizations occurs mainly through urgency with approximately 62% (2,759). 46.4% of these admissions occur in the age group of 60 to 69 years. It is also noteworthy that the mortality rate in the emergency department is twice that of the elective, being 17.07 and 8.44 respectively.

Table 6: Mortality rate by type of care, according to age group and elderly, Amapá, april 2018 to april 2019

Age group	**Male**		**Female**		**Total**	
	f (n)	TR	f (n)	TR	f (n)	TR
60 |---| 69 years	906	8,07	1.162	12,13	2.068	9,48
70 |---| 79 years	503	10,34	906	17,11	1.409	14,69
80 years and over	285	12,63	691	25,33	976	21,62
Total	**1.694**	**8,44**	**2.759**	**17,07**	**4.453**	**13,79**

Note: f(n) = quantitative value; TR = mortality rate. Source: Ministry of Health - SUS Hospital Information System (SIH / SUS) / DATASUS

IV. DISCUSSION

This study strengthens the reality of brazilian states in relation to hospitalizations for the elderly, given that this scenario started with the advance of technological and industrial revolutions where there was an improvement in the quality of life and a reduction in mortality and birth rates. These indicators favored the life expectancy of the population, contributing to the population aging and the emergence of new health demands, especially regarding vaccines and the assistance of chronic diseases, resulting in a higher cost and prolonged time in health services (Parente, & Parente, & Vieira, 2018; Melo, 2019).

For the World Health Organization (WHO), the elderly are characterized like anyone over 60 years of age or older in developing countries and 65 years in developed countries. In Brazil, based on the Elderly Statute, this citizen is considered to be elderly from 60 years (Santa Catarina, 2018). According to data from the 2010 census, people aged 65 and over already represent 7.4% of the brazilian population favoring the widening of the top of the age pyramid, moving from a young society to a scenario of people with complex and more costly illnesses to the state, typical of the most advanced age groups (Schenker & Costa, 2019). Projections indicate that, in 2030, this number will exceed that of children and adolescents aged 0

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to 14 years. In 2050, the elderly population will represent about 30% of the brazilian population (Brazil, 2018).

The modification of the epidemiological transition has been altering the profile of morbidity and mortality in Brazil, also favoring an overload of infectious diseases, Chronic Noncommunicable Diseases (NCDs) and an increase in external causes, and in this health context, the elderly tend to enjoy more from health services, with higher rates of hospitalizations compared to other age groups. The main causes of Brazilian hospitalization are brain-cardiovascular diseases, chronic respiratory diseases, neoplasms and external causes (Rossetto, 2019).

The high rates of hospitalizations of the elderly population, demonstrate that these people are aging with low quality of life and this reflects in the health system in offering quality care, starting with the reception and in the whole care process, and should start at the entrance door service and accompany the assisted person throughout their stay in the health system (Brazil, 2018). As a consequence of this scenario, in 2020, NCDs represented 78% of deaths worldwide, which may increase as a result of epidemiological events, in addition to generating great demand for drugs and rehabilitation (Rossetto, et al, 2019). It is a fact that chronic noncommunicable diseases are also the ones that lead most deaths to elderly brazilians, being affected by the same pathologies of the world profile, but they represented 80% of deaths between both sexes (Conte, 2018).

Intervention strategies must start with the expansion of primary care, in order to be able to be really the first level of care, acting as a gateway to the system. In addition to the insertion of instruments that guarantee the improvement of the quality and resolution of care for the elderly (Mendes, 2011 apud Lima & Oliveira, & Esteves, 2018).

The bases of health policies must meet the demographic profile of society with adaptations of the health system to the population, with guaranteed quality of access, ease of use of health services and home care. These implementations indicate the reformulation of health tools that include new forms of care favoring disease prevention. The relationship between aging and access to care represents, as a consequence, less physical willingness of the elderly to seek health services; socioeconomic variations; quality of life and low level of knowledge about health are determinants in the use of services and their frequency and, this, can determine difficulties of access to health services for the elderly population (Cruz, et al, 2020).

The Family Health Strategy (FHS) is a policy of reorganizing new health practices, which can assist in the approach and encourage active aging. This tool allows the guarantee of comprehensive care for the elderly, in order to promote their social insertion and increase their functional capacities (Damaceno & Chirelli, 2019).

V. CONCLUSION

The state of Amapá has been showing a growth in the elderly population, which in the near future may compromise the local health system, and it is necessary to reorganize its hospital structures, with the insertion of indicators that favor actions to improve the quality of care. It is evident that primary care should act as a gateway for this population, monitoring the diseases and illnesses that most manifest themselves in this age group, in order to improve the quality of life of these people and reduce the burden on hospital institutions.

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